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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/770,189 | 01/29/2001 | Yuichi Maruyama | Q62809 | 7312 |

7590 04/02/2004

SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

| EXAMINER |
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PHU, PHUONG M

| ART UNIT | PAPER NUMBER |
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2631

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/770,189

Applicant(s)

MARUYAMA, YUICHI

Examiner

Phuong Phu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1.3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 4 recites the limitation "said first dispreading section uses at least four multipliers for calculating said correlation signal". This limitation is not disclosed in the specification of the instant application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-3, and 5-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art, admitted by the applicant in the specification of the instant application (now referred as "the admitted prior art", in view of Miller (6,438,570).

As per claims 1, 14 and 19, see figure 1 and pages 1-3 of the specification, the admitted prior art discloses a method and associated system as claimed wherein the method/system (figure 1) comprises:

a converting step/means including a radio receiving section (1), as claimed;

a correlation value signal calculating step/means including a first despreading section (2), as claimed;

a delay profile calculating step/means including delay profile calculating section (31) which receives a correlation value signal from said first despreading section for calculating a profile delay, as claimed;

a phase detecting step/means including a synchronization tracking section (4), as claimed;

a spreading step/means including second despreading section (5), as claimed; and

a demodulating step/means including demodulating section (6), as claimed.

The admitted prior art does not disclose that said delay profile calculating section utilizes an IIR filter section functioning as a filter. In fact, in the admitted prior art system, said delay profile calculating section utilizes an FIR filter (see figure 2 of specification). However, Miller teaches that IIR filters can be alternatively used in place of FIR filters for low-costs and short design cycles (see Miller, col. 2, lines 11-22). Therefore, for an application, it would have been obvious that at the time the invention was made, one skilled in the art could alternatively use an

IIF filter in place of the FIR filter, as taught by Miller, in the admitted prior art system for an advantage of a low-cost and a short design cycle.

As per claims 2 and 15, see figure 2 of the specification of the instant application and figure 1A of Miller, the admitted prior art in view of Miller teaches that said IIR filter can be implemented as a 2nd order IIR filter wherein the IIR filter (see Miller, figure 1A, and col. 2, lines 48-49, and col. 3, line 66 to col. 4, line 52) comprises:

a first adder (+) which adds said correlation value signal ($V_{in}(n)$) and first and second delay data to produce a first addition result;

a first delay unit (Z^{-1}) which delays said first addition result by a first predetermined time to output a first delay result;

a second delay unit (Z^{-1}) which delays said first delay result by a second predetermined time to output a second delay result;

a first multiplier which multiplies said first delay result by a first predetermined coefficient (a_1) to produce said first delay data;

a second multiplier which multiplies said second delay result by a second predetermined coefficient (a_2) to produce said second delay data;

a third multiplier which multiplies said first delay result by a third predetermined coefficient (b_1) to produce a third delay data;

a forth multiplier which multiplies said second delay result by a forth predetermined coefficient (b_2) to produce a forth delay data; and

a second adder (+) which adds said third and forth delay data and said first addition result to produce a second addition result ($V_{out}(n)$) as said delay profile.

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As per claims 3 and 16, in the admitted prior art system in view of Miller, the first predetermined time (Z^{-1}) is equal to the second predetermined time (Z^{-1}) (see Miller, figure 1A).

As per claims 5 and 18, in the admitted prior art system in view of Miller, there is a filter coefficient setting section (inherently included) for digitally setting or switching the coefficients (a_1 , a_2 , b_1 , b_2) based on the synchronization states with the received correlation value signal (see Miller, figures 1A, 2A and 4).

As per claims 6 and 17, in the admitted prior art system in view of Miller, said IIR filter, as being implemented as a 2nd order IIR filter, inherently has the transfer function, as claimed.

As per claims 7-10, as applied to claims 2-6, the admitted prior art in view of Miller teaches the claimed system; and the admitted prior art in view of Miller further teaches a first multiplier which multiplies said correlation value by a coefficient (1) to produce a multiplied correlation value signal (see Miller, figure 1A).

As per claims 11-13, as applied for claims 2, 3 and 6, the admitted prior art in view of Miller discloses the claimed invention except that its IIR filter comprises an IIR filter unit, not a plurality of said IIR filter units in cascaded. However, it would have been obvious at the time of the invention was made to one skilled in the art to implement the IIR filter in the admitted prior art system in view of Miller with plurality of said IIR filter units in cascaded since it has been held that providing duplication of part for a multiple effect is obvious (see M.P.E.P 2144.04).

Conclusion

6. Reference (6,263,354) is additionally cited because they are pertinent to the claimed invention.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 703-308-0158. The examiner can normally be reached on M-F (8:30-6:00) First Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Phuong Phu
03/15/04

Phuong Phu
Primary Examiner
Art Unit 2631

PHOUNG PHU
PRIMARY EXAMINER